

# Procurement Regulations and Technical Description of the Procurement Object

**Procurement Object:** Development of a Control Software Prototype and Integration into the Existing Industrial Vacuum Coater

Procurement is carried out by:

SIA GroGlass, Address: Katlakalna iela 4b, Riga, LV-1073, Latvia, Reg. No. 40003710276

SIA Groglass (“Contracting Authority”) invites interested and qualified suppliers (“Tenderer”) to deliver proposals for the development of control software and its prototype integration into the existing industrial vacuum coater, partially replacing its current control system.

## 1. Purpose of the Procurement

The purpose of this procurement is to select a supplier for the process control implementation project, which shall be implemented in several stages: “Discovery Phase”, during which the scope and cost of the full “Phase 1” implementation solution shall be precisely determined. The proposal shall demonstrate the supplier's ability to also implement the next two optional phases (Phase 2 and Phase 3), which shall allow the development of a fully autonomous, self-regulating production system in the future.

## 2. Tenderer Qualification

Tenderers shall meet the following mandatory requirements:

**2.1 Industry Experience:** The bidder shall be a recognized original equipment manufacturer (OEM) specializing in in-line vertical vacuum coating systems. The proposed solution shall be suitable for equipment designed for coating both sides of at least 2x3 meter flat glass with metal oxide thin films in a single vacuum cycle, using magnetron sputtering technology.

**2.2 Proven Technology:** The proposed software shall be a proven platform, successfully implemented in new or modernized vacuum coating equipment. Tenderers shall deliver references or case studies.

## 3. Scope of Work and Implementation Stages

The project is structured into three consecutive stages. This procurement delivers for the conclusion of a contract for the “Discovery Phase” and, after its successful completion, for the implementation of “Phase 1”. Tenderers shall confirm their technical capability and deliver a vision for all three phases in their proposal, but shall deliver a financial proposal as follows:

a fixed financial offer for the “Discovery Phase” and a detailed budget estimate for the implementation of “Phase 1”.

The bidder shall understand that only after the completion of the “Discovery Phase” and evaluation of its deliverables shall a decision be made on the continuation of the contract and the start of “Phase 1” work. The contract shall specify the Contracting Authority’s right to terminate the contract after the completion of the “Discovery Phase.”

An essential condition for all project phases is ensuring the continuity of the production process. The bidder shall plan all integration work so that it does not cause unplanned production downtime. All work shall be carried out in accordance with the Contracting Authority's 24/7 production schedule and shall be planned during scheduled maintenance or product changeovers.

### 3.1. Discovery Phase (mandatory first step)

**Objective:** Conduct a detailed study of the existing OT infrastructure (PLC system, network architecture, control sequences). Result – a detailed technical report with the exact project scope, HW/SW requirements, and project plan for full Phase 1 implementation.

**Deliverables:**

- Audit of the existing OT system (PLC components, utilization, device overview).
- Detailed integration plan with proposed OT and electrical plans.
- List of required hardware upgrades.
- Fixed final financial offer for full Phase 1 implementation.

**Pricing Requirement:** Tenderers shall deliver a fixed financial offer for the Discovery Phase.

### 3.2. Implementation – Phase 1

- **Objective:** To implement a state-of-the-art, web-based coater control platform that harmonizes operations, enhances data visualization and logging, and establishes a **product ID-based data structure**. The approach may include the replacement, modification, or partial integration of the existing SCADA system, as proposed by the Bidder and defined during the Discovery Phase.
- **Key Deliverables & Acceptance Criteria:**

<b>Deliverable</b>	<b>Acceptance Criteria</b>
<b>1. State-of-the-Art Control Platform</b>	A fully commissioned, web-based control platform is accessible via standard web browsers on the company network. The system demonstrates stable multi-user access with role-based permissions successfully restricting/allowing access to specific functions for Technologist, Operator, and Management roles.

<b>2. Recipe Management System</b>	<p>An operator can successfully create, store, retrieve, and apply "master" and "work" recipes. A recipe must contain all necessary process parameters, including but not limited to: coating speed, power, MFC flows, sides to be coated, arc parameters, power limitations, and power profiles for uniformity. The system logs which recipe was used for each unique product ID.</p>
<b>3. Harmonized Coater Operations</b>	<p>A sequence builder is implemented, allowing a Technologist to define and standardize operational workflows. An operator can successfully execute a pre-defined sequence, and the system logs each step of the execution.</p>
<b>4. Enhanced Visualization &amp; Logging</b>	<p>The system provides configurable and personalized dashboards. Successful implementation will be demonstrated by: a) A management dashboard displaying key OEE metrics. b) An operator dashboard visualizing real-time MFC flows and target status (kWh consumption, material layout). c) A QC dashboard visualizing lab results against defined limits/specs.</p>
<b>5. Product ID Based Data Structure</b>	<p>All process data, logs, and QC results are linked to a unique product ID (Pane ID). This will be verified by selecting a specific Pane ID and successfully retrieving all associated production parameters, recipe used, and lab results.</p>
<b>6. Component Serial Number Tracking</b>	<p>The system provides a user interface for logging and tracking serial numbers of key components (e.g., targets, magnetrons). This is verified by successfully entering, storing, and retrieving the history of components used in a specific cathode.</p>
<b>7. External System Interfacing</b>	<p>The system demonstrates successful data communication with the Dr. Schenker (defects) and Zeiss (optical quality) systems. This is verified by the automated population of relevant data from these systems into the platform, linked to the correct product ID.</p>
<b>8. Future Enterprise System Compatibility</b>	<p>The system architecture must be inherently extensible, featuring a well-documented Application Programming Interface (API) and support for industry-standard communication protocols (e.g., OPC-UA, MQTT). The platform must be designed to function as an interoperable data hub, capable of seamless, bi-directional data exchange with future digital solution integrations. This is verified by a successful demonstration of the API's capability to expose key process variables and accept external commands in a controlled test environment.</p>

### 3.3. Phase 2: Anomaly Detection System (optional future phase)

**Objective:** Enhance the system implemented in Phase 1 with advanced anomaly detection capabilities using self-learning neural networks or similar machine learning models.

**Confirmation:** Tenderers shall deliver confirmation of their readiness to implement Phase 2, describing the approach and experience in implementing such systems, including an overview of proposed technologies (e.g., Fault Detection, Statistical Process Control (SPC), Out-of-Control Action Plans (OCAP)) and a technology development roadmap.

### **3.4. Phase 3: Closed-Loop Control System (optional future phase)**

**Objective:** Develop the system into a fully autonomous process control solution capable of automatically adjusting and regulating process parameters.

**Confirmation:** Tenderers shall deliver confirmation of their readiness to implement Phase 3. This statement shall include an overview of the methodology for developing and implementing closed-loop control in a magnetron sputtering environment.

## **4. Price Proposal Requirements**

Tenderers shall deliver a clearly structured financial proposal, with financial offers specified as follows:

**Discovery Phase:** Submit a fixed, binding financial offer for achieving all deliverables specified in Section 3.1.

**Phase 1 Implementation:** Submit a detailed, non-binding budget estimate for achieving all deliverables specified in Section 3.2. The estimate shall deliver a transparent cost breakdown.

### Important Pricing Information:

The final, binding financial offer for Phase 1 implementation shall be determined and agreed after the successful completion of the Discovery Phase.

The total cost of the Discovery Phase and Phase 1 implementation shall not exceed EUR 350,000.

The Contracting Authority reserves the right to terminate the project after completion of the Discovery Phase. The decision to continue with Phase 1 shall depend on the deliverables of the Discovery Phase.

## **5. Proposal Submission Requirements**

Tenderers shall deliver a comprehensive proposal containing the following sections:

- **Company profile and qualification:** Company overview, proof of compliance with the qualifications specified in Section 2, including relevant experience and references.
- **Technical proposal:** A detailed description of the proposed solution and methodology for

each phase. This shall include:

- \* Clearly defined schedule and steps for the Discovery Phase.
  - \* Planned schedule and steps for Phase 1 implementation.
  - \* Confirmations of ability to implement Phases 2 and 3.
  - \* Methodology description ensuring execution without unplanned production downtime, in line with Section 3 requirements.
- **Financial proposal:** Submitted separately, shall comply with Section 4 requirements and include a clear breakdown of annual maintenance/license fees for Phase 1.

If an equivalent solution exists that meets the requirements of the procurement object description but was not foreseen by the Contracting Authority, the bidder may deliver a proposal meeting these equivalent requirements.

## **6. Proposal Evaluation Criteria**

Proposals shall be evaluated based on the economically most advantageous offer, considering the following criteria:

**Price (40%):** Fixed financial offer for the Discovery Phase and budget estimate for Phase 1 shall be the main financial evaluation points.

### **Technical quality (60%):**

- Compliance with bidder qualification requirements.
- Compliance of the proposed solution with technical requirements and acceptance criteria.
- Tenderer's experience and competence in implementing similar industrial projects.
- Clarity and completeness of confirmations for Phases 2 and 3.
- Scalability of the proposed platform and readiness for future development.

## **7. Deadlines**

Discovery Phase: up to 6 weeks from contract signing, but no later than January 31, 2026

Phase 1: up to 5 months from receipt of the Contracting Authority's notice to continue work, but no later than August 31, 2026.

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